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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/552,097

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Leung Choi Chow

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PATTERSON, THUENTE, SKAAR & CHRISTENSEN, P.A.
4800 IDS CENTER
80 SOUTH 8TH STREET
MINNEAPOLIS, MN 55402-2100

EXAMINER

MICHENER, JOSHUA J

ART UNIT

PAPER NUMBER

3644

MAIL DATE

DELIVERY MODE

10/06/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/552,097	Applicant(s) CHOW ET AL.	
	Examiner JOSHUA J. MICHENER	Art Unit 3644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-29 and 31-34 is/are pending in the application.
- 4a) Of the above claim(s) 19,21,22,24,31 and 32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15 - 18, 20, 23, 27 - 29, 33, and 34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2008 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/16/2008 has been entered.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “*a junction between the first surface and **the third surface** and a junction between the second surface and **the third surface...***” must be shown or the feature(s) canceled from the claim(s). *In the instance the junctions are shown in the figures, the Examiner suggests providing reference numerals on the drawings and amend the specification accordingly.* No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the

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renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: “*a junction* between the first surface and the third surface and *a junction* between the second surface and the third surface...”

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 15 – 18, 20, 23, 27, 33, and 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15 recites, “...the tire and wheel are each so shaped that a gap is defined between a surface of the wheel and a surface of the tire...” However, “the wheel” comprises a tire, rim, and hub, thus it is unclear what Applicant is attempting to claim as the wheel is generally the whole assembly. It appears “wheel” should be replaced by - rim- because the gap is defined in the junction between the tire and the rim as recited in part (b) of claim 15.

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Claim 15 further recites, "...a second surface in contact with the wheel..." it again appears wheel should be replaced with - rim- - as it unclear what Applicant intends "wheel" to encompass.

Claim 15 further recites, "...**a third surface** which extends from *a junction* between the first surface and **the third surface** and *a junction* between the second surface and **the third surface**..." However, it is unclear how a third surface extends from itself AND it is unclear where these second and third junctions are.

Claim 34 recites, "the second surface follows the shape of the wheel." However, it is unclear what shape Applicant intends to claim as there are many shapes associated with the wheel (see also rejection above regarding the wheel and rim).

Claims 16-18, 20, 23, 27, 33, and 34 are rejected as being dependent upon a rejected base claim.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim 28 is rejected under 35 U.S.C. 102(b) as being anticipated by Fletcher et al. (US 3,187,797).

5. Regarding claim 28, Fletcher et al. discloses an aircraft (col 1, lines 10 – 25) with retractable landing gear (col 2, lines 36 - 44) with tires and rims (figures 1, 2, and 5 – 7) wherein the tire and wheel are shaped that a gap is defined between a surface of the tire and wheel (figures 1, 2, 5 - 7), a separate part (figures 1, 2, 5 - 7) that smoothly envelopes at the junction between the tire and the rim which closes said gap (see figures above), said separate part is so

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shaped that on at least one side of the wheel, a surface of said separate interfaces smoothly with said surface of the wheel and surface of the tire. It is noted, the method is inherent to the apparatus as claimed. It should be appreciated that the applicant's functional language in the claims does not serve to impart patentability. While features of an apparatus may be recited either structurally or functional, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. Apparatus claims cover what a device is, not what a device does. A claim containing a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior apparatus teaches all the structural limitation of the claims. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d, 1429, 1431-.2 (Fed. Cir. 1997); Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990); Ex parte Masham, 2 USPQ 2d 1647 (Bd. Pat. App. & Inter. 1987).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 15 – 18, 20, 23, 27 - 29, 33, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Large et al. (US 5,100,083) in view of Roth (US 1,743,074).

6. Regarding claims 15, 16, 17, 18, 23, 28, and 29, as best understood, Large discloses an aircraft comprising movable landing gear between and stowed and retracted position (figures 4 and 5) wherein the landing gear comprises a wheel having a tire and a rim (figures 1 – 3) where a junction exists between the tire and rim forming a gap to some degree (figures 1 – 3).

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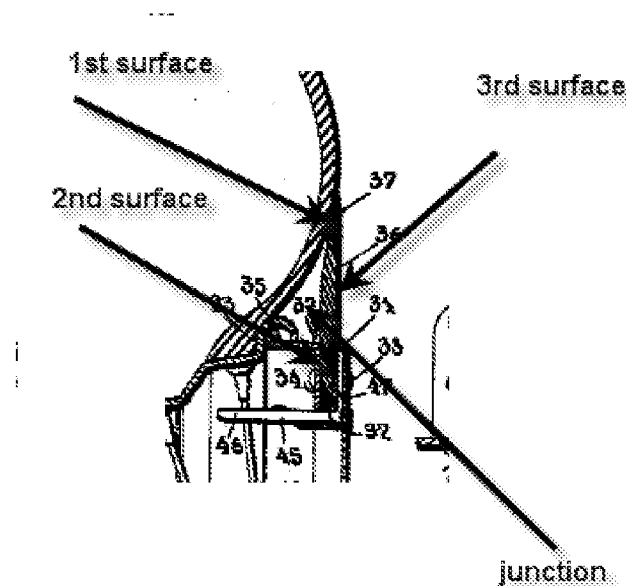
Large fails to teach of a separate part that is provided between the junction to close the gap wherein a first surface is in contact with the tire, a second surface in contact with the wheel (rim) and a third surface that extends across the junction.

Roth discloses it is known to have a separate part on both sides of the wheel with a first surface in contact with the tire (see figure below), the second surface in contact with the rim (17,23,35,32,34) and third surface extending across the gap on an aircraft wheel (see figure below) wherein the separate part is flexible and made of rubber (col 2, line 21) thus deformable and capable to be moved manually.

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Large to comprise of a separate part that closes the gap between the junction on both sides of the wheel between the tire and rim as disclosed by Roth in order to reduce air resistance by streamlining the flow as taught by Roth (lines 5 – 11).

It should be appreciated that the applicant's functional language in the claims does not serve to impart patentability. While features of an apparatus may be recited either structurally or functional, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. Apparatus claims cover what a device is, not what a device does. A claim containing a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior apparatus teaches all the structural limitation of the claims.

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Regarding claim 20, Large, as modified, discloses the apparatus as in claim 15 wherein at least a portion (the separate part is made of rubber) is so configured that once the force between the wheels and the ground exceeds a first given threshold force, it moves out of a gap that said separate part bridges when the aircraft is airborne, and once the force between the wheels and the ground drops to or below a second given threshold force, it moves back to the position in which it bridges the gap.

Regarding claim 27, Large, as modified, discloses the apparatus as in claim 15, wherein the landing gear are suitable for jet engine aircraft with undercarriage cargo bay storage, but is silent to type/size suitable for 50 or more passengers. However, the Examiner takes official notice, it is old and well known in the art that commercial airliners are comprised of retractable landing gear with undercarriage bay storage wherein some jet engine airliners carry 50 or more passengers. Thus, it would have been obvious for one of ordinary skill in the art at the time the invention was made to implement this landing gear system of Large, as modified into an airliner

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that carries 50 or more passengers because it is old and well known to utilize retractable landing gear on commercial airlines to reduce air drag during takeoff and landing.

Regarding claim 33, Large, as modified, discloses the apparatus as in claim 15 wherein the first surface follows the shape of the tire (see figure above).

Regarding claim 34, as best understood, Large, as modified, discloses the apparatus as in claim 15 wherein the first surface follows the shape of the wheel (see figure above).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSHUA J. MICHENER whose telephone number is (571)272-1467. The examiner can normally be reached on Monday through Friday 7-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Mansen can be reached on 571-272-6608. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael R Mansen/
Supervisory Patent Examiner, Art Unit 3644

/J. J. M./